

BLOCK III: NEW METHODOLOGIES OF INTEREST TO INTELLIGENCE

The growth in the size and complexities of the target subjects of U.S. Intelligence and the Intelligence Community itself poses serious questions concerning the adequacy of traditional approaches of intelligence analysis and management of intelligence resources. The family of new methodologies has been used with success in such areas of intelligence as the development of large technical collection systems and data reduction. Interest in applying these techniques to intelligence analysis and management has been growing, but it still lags due to human resistance to change and as a result of conflicting and often unproven claims as to their value. This Block presents a brief overview of the major quantitative methodologies and provides a more detailed exposure to several of particular interest in intelligence work.

## SCOPE NOTE

### NEW METHODS FOR FOREIGN AFFAIRS ANALYSIS: AN OVERVIEW

The post World War II behavioral revolution in the social sciences has made it possible for analysts of international affairs to employ more precise formulations of important concepts, and to uncover recurring behavioral patterns in situations hitherto treated as unique. After discussing the historical context of the behavioral revolution and some of the reasons for the lag in applying these new methods, a proponent of these new approaches will discuss their capabilities and components. He will present an overview of the many new theoretical approaches (e.g., Systems Theory and Game Theory) and descriptions of some of the techniques being used in them (e.g., Decision Analysis, Simulation), and conclude with a discussion of possible approaches to the utilization of these new methods in foreign affairs and intelligence analysis.

SCOPE NOTE

PROBABILITY ESTIMATES AND PROBABILISTIC PROCEDURES  
IN INTELLIGENCE ANALYSIS

Intelligence forecasts are often sufficiently uncertain so that the extent of the uncertainty should be communicated to the users. Probabilities and odds are natural numerical devices for doing so. But various problems, including unfamiliarity with probability theory, the vague, verbal, and qualitative nature of much intelligence data, and certain human biases, make probability estimates difficult. A new intelligence information processing technology built around Bayes's Theorem of probability theory has been developed and is coming into extensive use. One of its developers, a nationally recognized authority in this field, will explain it and illustrate its application to solution of an intelligence estimation problem. He will also discuss efforts in both CIA and DIA to study and exploit this technology.

SCOPE NOTE

MANAGEMENT SCIENCE AND MANAGEMENT OF INTELLIGENCE

Intelligence organizations are currently pressed to provide even more effective management of limited resources. One approach to this problem is the fuller use of quantitative and analytical methods which collectively are called Management Science. An advocate of this concept will briefly analyze management processes and then discuss the relevance and use of such methods as organization theory, probability, forecasting, resource allocation, and decision-theory, as an aid in the Management of Intelligence.

SCOPE NOTE

EXPLORATION OF NEW METHODOLOGIES IN THE CS

The adaptation of modern management methodologies and techniques to the particular needs of the Clandestine Service will be surveyed by two officers assigned to this area. New approaches for evaluating and analyzing risk, productivity and resource use in support of CS managers will be discussed, with examples of progress to date.

SCOPE NOTE

ADP IN CIA: SURVEY AND OUTLOOK

Three generations of computers have profoundly impacted on the work of CIA--an Agency whose first human generation is still very much alive. A senior officer who has been associated with many facets of ADP activities will present a panorama of the major efforts to cope with the burgeoning information handling problem and with the increasingly sophisticated applications of ADP for technical collection, intelligence analysis and management, including some peculiar to the Agency. He will outline some likely future trends and developments in how the Agency organizes and applies its ADP resources.

SCOPE NOTE

A U.S., STRATEGIC MODEL: THE ARSENAL EXCHANGE PROBLEM

Understanding Soviet defense policy is a major goal of U.S. intelligence. The Soviet view of the relationship between the strategic forces of the U.S. and USSR is an important input to the determination of Soviet defense policy. The composition and complexity of the opposing nuclear arsenals make it difficult, however, to measure the strategic balance. Computer-driven interaction models help to overcome the ambiguities of simple quantitative measures by relating the numbers and characteristics of the opposing arsenals to likely target plans under different strategic situations. The Arsenal Exchange Model has been used increasingly in this way to support analysis of U.S. and Soviet SALT proposals and to assist in projecting Soviet strategic forces for National Intelligence Estimates and inter-agency studies conducted under NSC auspices.

SCOPE NOTE

DECISION-MAKING MODELS: THE CUBAN MISSILE CRISIS

Several widely varying scenarios for U.S. decision-making in a major crisis will be developed and discussed by a leading student of the decision process. He will draw especially on data from the Cuban missile crisis to create several different models to "explain" the decisions actually made. The general relevance of this approach to intelligence analysis will be emphasized.



ADMINISTRATIVE - INTERNAL USE ONLY

## SCOPE NOTE

### INTELLIGENCE PRODUCTS: PROBLEMS AND IMPROVEMENTS

Problems in present intelligence products as seen by NSC staff consumers will be discussed by the Director, Net Assessment Group, NSC. He will discuss problems with present products, the need for sensitivity to consumer needs, possible new approaches to analysis, and the impact of net assessment on intelligence.

ADMINISTRATIVE - INTERNAL USE ONLY

## SCOPE NOTE

### IMPLICATIONS OF NEW METHODOLOGIES FOR CIA

The usefulness of new methodologies--both for future patterns of intelligence collection, processing and production as well as for selection and management of intelligence resources--will be explored by an inter-Directorate panel. The panelists will consider those methodologies now accepted as useful to intelligence and those which offer promise for advances in our intelligence work and product.

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Who will make  
up panel

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SCOPE NOTE

SIMULATION AND MODELING IN WORLD AFFAIRS ANALYSIS

After a review of the concept of simulation and the uses of models for social analysis and forecasting, the speaker will discuss his own efforts in the field of modeling global systems. He will describe the background and purposes of his The Limits to Growth study, followed by an explanation of the components of the World 3 Model in terms of its major variables and relationships. The presentation will conclude with a brief discussion of the major criticisms of the study and his plans for further research in this area.

SCOPE NOTE

FUTURISM

The need for new methods arises not only from current pressures and developments but also for longer-range projections of the future by "futurists." What futurism is, the kinds of things futurists do, and the tools they use will be discussed by a knowledgeable scientist-official of the National Science Foundation.

## SCOPE NOTE

### THE NEED FOR NEW METHODS: AN OVERVIEW

An academic expert with government experience will briefly review the new methods and raise the following questions for general discussion:

- 1) What types of predictive performance can they now provide?
- 2) How good would their predictive power need to be to make them useful for intelligence purposes?
- 3) To what extent can predictive power be increased through applied research and development?
- 4) What relationships between government analysts and academic experts are likely to make the new methods most fruitful?